



GE NovaSensor

NPP-301 Series

Surface Mount Pressure Sensor



Description

The NPP Series features silicon pressure sensors in surface mount packages. An ultra-small Silicon Fusion Bonded (SFB), ultra-high stability SenStable® piezoresistive chip from GE NovaSensor® is placed in a plastic package that exploits high volume, leadframe package technology to bring forth a low-cost sensor alternative to the OEM user.

With constant voltage excitation, the NPP-301 produces a voltage output that is linearly proportional to the input pressure. The user can provide NPP Series products with signal conditioning circuitry to amplify the output signal or to maximize OEM value added. The NPP Series is compatible with most noncorrosive gases and dry air.

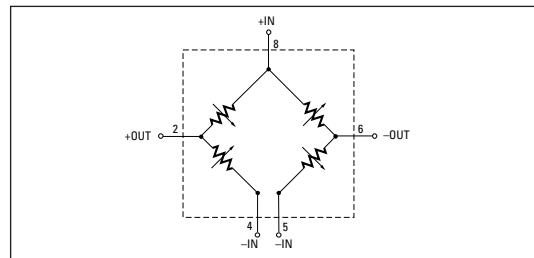
Features

- Low-cost surface mount package: SO-8
- Wide operating temperature range: -40 to +125°C
- Static accuracy < 0.20% FSO maximum
- Suitable for automated component assembly
- Four element Wheatstone bridge configuration for circuit design flexibility
- Solid-state reliability
- 100, 200 and 700 kPa absolute pressure ranges available

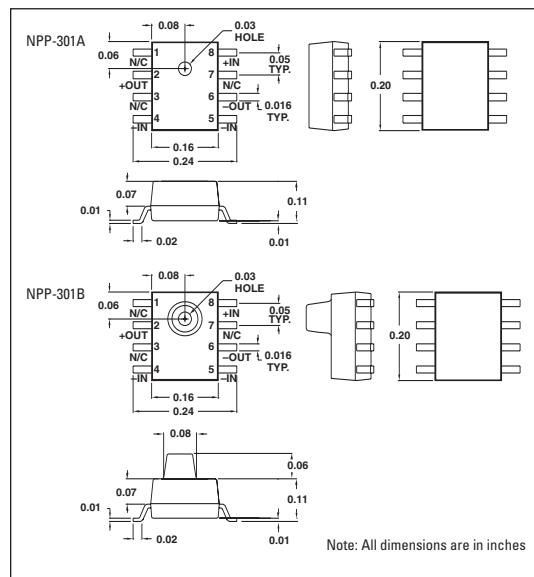
Applications

- Automotive Tire Pressure
- Pneumatic Controls
- Pressure Switches and Controllers
- Altimeters and Barometers
- Cable Leak Detection
- Consumer Appliances
- Portable Gages and Manometers

Schematic Diagram



Package Diagram



How to Order

| Part Number | Description | Shipping |
|----------------|----------------------|-------------|
| NPP-301A-100A | 15 psia, non-ported | IC tubes |
| NPP-301A-200A | 30 psia, non-ported | IC tubes |
| NPP-301A-700A | 100 psia, non-ported | IC tubes |
| NPP-301A-100AT | 15 psia, non-ported | tape & reel |
| NPP-301A-200AT | 30 psia, non-ported | tape & reel |
| NPP-301A-700AT | 100 psia, non-ported | tape & reel |
| NPP-301B-100A | 15 psia, ported | IC tubes |
| NPP-301B-200A | 30 psia, ported | IC tubes |
| NPP-301B-700A | 100 psia, ported | IC tubes |
| NPP-301B-100AT | 15 psia, ported | tape & reel |
| NPP-301B-200AT | 30 psia, ported | tape & reel |
| NPP-301B-700AT | 100 psia, ported | tape & reel |

Specifications

| Parameter | Value | Units | Notes | | |
|---|---------------------------------------|-------------------|-----------------------------------|------|-------|
| General | | | | | |
| Pressure Range | 100 200 700 | kPa kPa kPa | ≈ 15 psi ≈ 30 psi ≈ 100 psi | | |
| Maximum Pressure | 3 x | | rated pressure | | |
| Electrical @ 25°C (77°F) unless otherwise stated | | | | | |
| Excitation | 3.0 | V | 10VDC max. | | |
| Input Impedance | 5,000 ± 20% | Ω | | | |
| Output Impedance | 5,000 ± 20% | Ω | | | |
| Environmental | | | | | |
| Electrostatic Damage (ESD) | Class 1 | | | | |
| Operating Temperature Range | -40 to +125 | °C | -40° to +257°F | | |
| Mechanical⁽¹⁾ | | | | | |
| Weight | ≈ 0.10 | grams | | | |
| Media Compatibility | Clean, dry air and noncorrosive gases | | | | |
| Parameter | Units | Min. | Typ. | Max. | Notes |
| Performance Parameters (Note 2) | | | | | |
| Offset | mV/V | | ±10 | | |
| Full Scale Output | mV | | 60 ±20 | | |
| Linearity | %FSO | | ±0.20 | 3 | |
| Hysteresis and Repeatability | %FSO | | 0.1 | | |
| Thermal Coefficient of Zero | %FSO/°C | | 0.04 | 4 | |
| Thermal Coefficient of Resistance | %/°C | | +0.3 | 4 | |
| Thermal Coefficient of Sensitivity | %FSO/°C | | -0.2 | 4 | |
| Thermal Hysteresis of Zero | %FSO | | 0.1 | 5 | |
| Long-Term Stability of FSO | %FSO | | 0.2 | 6 | |

Notes: 1. Standard IC industry bake operations should be used prior to surface mount operations. Consult factory for further information.
 2. Values measured at 3VDC and 22°C, unless otherwise noted. 3. Best fit straight line. 4. Typical coefficients, between 0° and +70°C.
 5. 0° to 70°C. 6. Typical value over one year.



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GE Novasensor
 1055 Mission Court,
 Fremont, California 94539
www.novasensor.com
 Toll Free: 800-962-7364
 Tel: 510-661-6000
 Fax: 510-770-0645



Sales Terms:

GE NovaSensor standard sales terms apply.
 Prices and specifications are subject to change without notice.

Warranty:

GE NovaSensor warrants its products against defects in material and workmanship for 12 months from the date of shipment. Products not subjected to misuse will be repaired or replaced. GE NovaSensor reserves the right to make changes without further notice to any products herein. NovaSensor makes no warranty, representation or guarantee regarding the suitability of its products for any particular application, nor does GE NovaSensor assume any liability arising out of the application or use of any product or circuit and specifically disclaims and all liability without limitation consequential or incidental damages. The foregoing warranties are exclusive and in lieu of all other warranties, whether written, oral, implied or statutory. NO IMPLIED STATUTORY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL APPLY.